

**SD103AM3 THRU SD103CM3**

**SCHOTTKY BARRIER RECTIFIERS**



**VOLTAGE:** 20~40 Volts    **CURRENT:** 20.0 mAmperes    **SOD-323**    **Marking and Polarity**

**FEATURES**

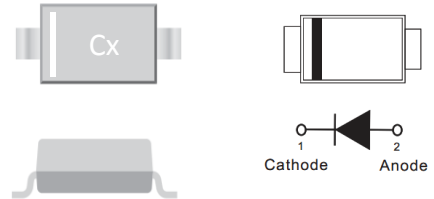
- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

**MECHANICAL DATA**

- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant
- **Weight:** App. 0.0041 grams (0.0001 ounce)

**TYPICAL APPLICATIONS**

- For use in high frequency inverteS ,AC/DC converteS, DC/DC converteS,LED driver etc. applications



**Remark:**

- ①. Cx=Modle,x=A,B,C
- ②. White band denotes cathode
- ③. Marking:SD103AM3: CA  
SD103BM3: CB  
SD103CM3: CC

**Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified.)**

Parameter	Symbol	SD103AM3	SD103BM3	SD103CM3	Unit
Maximum repetitive peak reveSe voltage	$V_{RRM}$	40	30	20	V
Maximum RMS voltage	$V_{RMS}$	28	21	14	V
Maximum DC blocking voltage	$V_{DC}$	40	30	20	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	20.0			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)(see fig.5)	$I_{FSM}$	2			A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2t$	0.02			A <sup>2</sup> sec

**Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).**

Parameter	Test Conditions		Symbol	SD103AM3	SD103BM3	SD103CM3	Unit
	$T_A=25^\circ C$	$I_F=20.0\text{ mA}$					
Maximum instantaneous forward voltage (see fig.2) (Note 1)	$T_A=25^\circ C$	$I_F=20.0\text{ mA}$	$V_F$	0.37			V
	$T_A=125^\circ C$	$I_F=20.0\text{ mA}$		0.32			
Maximum instantaneous reveSecurrent at rated DC blockingvoltage (see fig.3)(Note 1)	$T_A=25^\circ C$	$V_R=V_{RRM}$	$I_R$	5			uA
	$T_A=125^\circ C$	$V_R=80\%*V_{RRM}$		2			
Typical junction capacitance(see fig.4)	4V,1MHz		$C_J$	50			pF

**Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified )**

Parameter	Symbol	SD103AM3	SD103BM3	SD103CM3	Unit
Operating junction	$T_J$	-55	to	125	°C
Storage temperature range	$T_{STG}$	-55	to	125	

- Note:**
- 1.Pulse width < 300 uS, Duty cycle < 2%
  - 2.P.C.B. mounted with 0.1"x0.1"(2.54 x2.54 mm) copper pad areas

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**RATING AND CHARACTERISTIC CURVES**

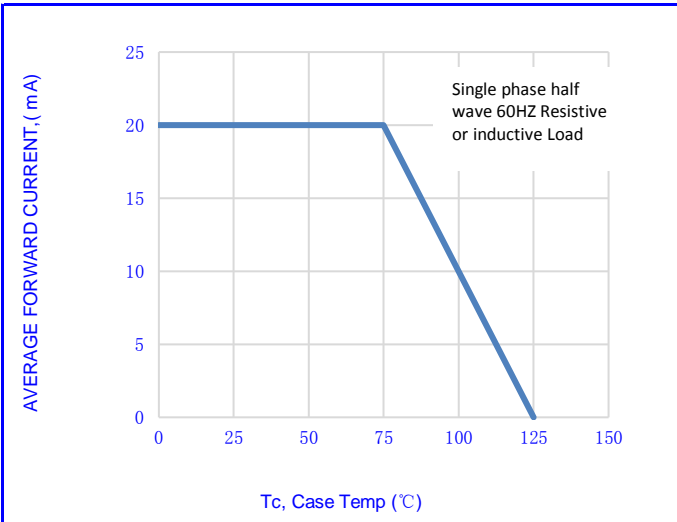


Fig.1- FORWARD CURRENT DERATING CURVE

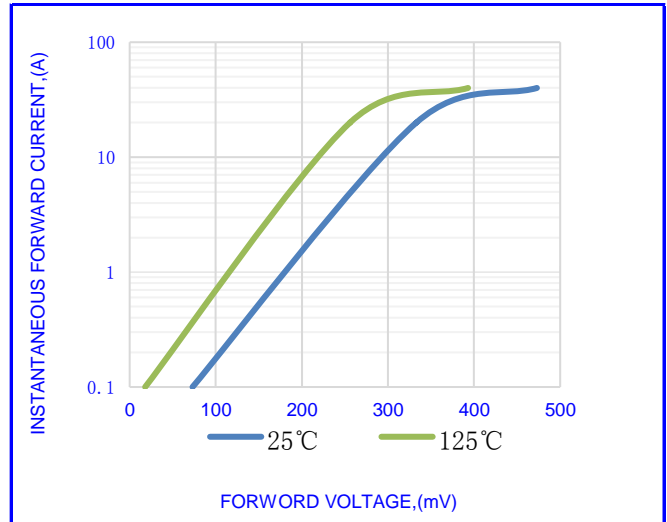


Fig.2-TYPICAL INSTANTANEOUS FORWARD

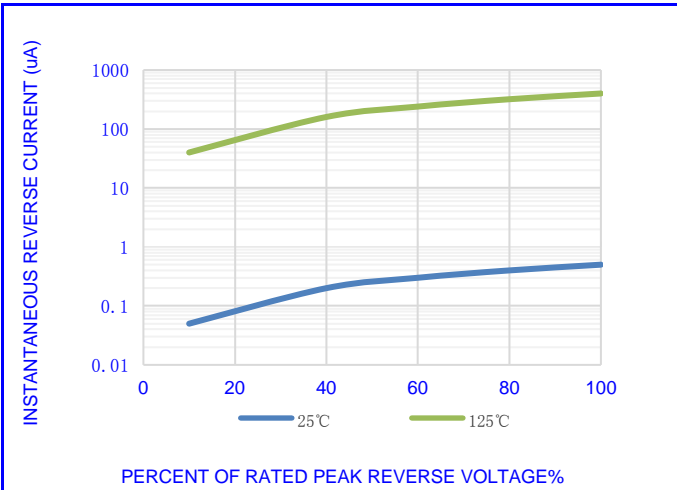


Fig.3-TYPICAL REVERSE CHARACTERISTICS

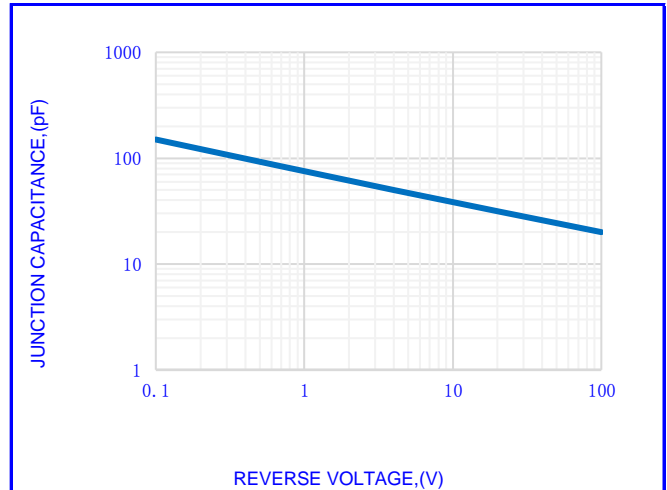


Fig.4- TYPICAL JUNCTION CAPACITANCE

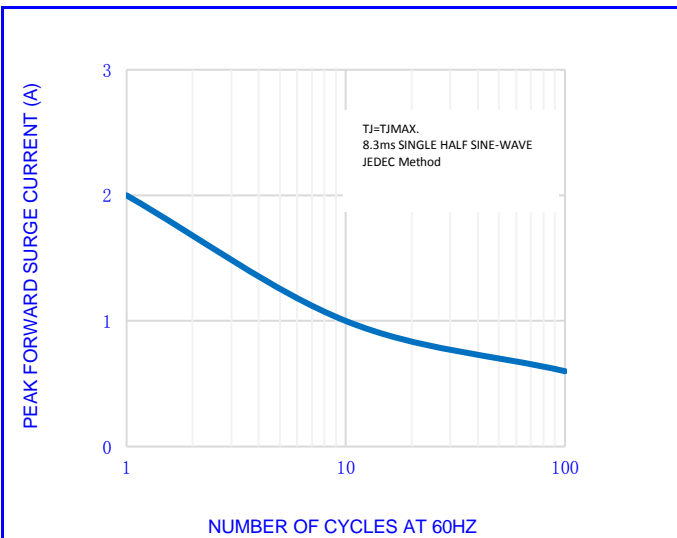


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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OUTLINE DRAWINGS				SOD-323						
				<b>OUTLINE DIMENSIONS</b>						
				Millimeters		Inches				
				Dim.	Min.	Typ.	Max.	Min.	Typ.	Max.
				A	1.600	-	1.800	0.063	-	0.071
				B	2.400	-	2.700	0.094	-	0.106
				C	1.200	-	1.400	0.047	-	0.055
				D	-	-	1.000	-	-	0.039
				E	0.250	-	0.350	0.010	-	0.014
				F	0.080	-	0.150	0.003	-	0.006
				G	-	0.475	-	-	0.019	-
				H	-	-	0.120	-	-	0.005

RECOMMENDED LAYOUT DRAWINGS				SOD-323						
				<b>RECOMMENDED MOUNTING PAD DIMENSIONS</b>						
				Millimeters		Inches				
				Dim.	Min.	Typ.	Max.	Min.	Typ.	Max.
				A	--	2.900	--	--	0.114	--
				B	--	0.500	--	--	0.020	--
				C	--	1.440	--	--	0.057	--
				D	--	0.730	--	--	0.029	--

PACKING INFORMATION				SOD-323		
Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ180	3000	185x185x90	21000	400x400x300	252000

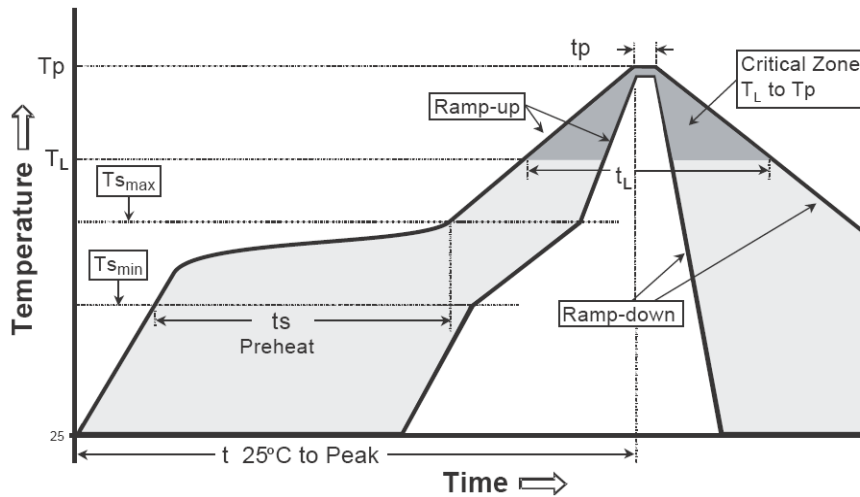
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**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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